New Jersey's
Clean Energy
PROGRAM™

Your Power to Save

New Jersey Board of Public Utilities
Office of Clean Energy

2003 ANNUAL REPORT

A Year of Continued Growth

A Year of Significant Change

contents

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New Jersey's Clean Energy Program,
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State of New Jersey
OFFICE OF THE GOVERNOR

New Jersey's Clean Energy PROGRAM
Your Power to Save

Dear Friend,

Clean Energy is critically important for our future. The residents of New Jersey need and deserve a progressive energy policy. We need a policy that powers our lives and empowers our community and business leaders to realize the economic and environmental benefits related to clean energy use.

I am proud that this Administration is succeeding in implementing such a plan – through the promotion of clean, efficient, renewable and reliable energy sources. Last year, I proposed a smart energy grid technology that can provide reliable, affordable and clean energy. This year Conectiv began building the first new components of a smart energy grid in New Jersey. In addition, my Administration has worked with coal-powered power providers to close many of the facilities that pollute our air. However, we have more work to do.

New Jersey is the nation's most densely populated state with one of the largest commercial economies. Our families and businesses are particularly vulnerable to fluctuations in the energy market.

Efficient and renewable energy technologies reduce and stabilize energy costs, decrease our dependence on foreign oil and protect the environment. Clean Energy reduces greenhouse gas emissions responsible for global warming, reduces air pollution and improves our overall public health. It also makes us stronger and safer by creating high-tech jobs, decentralizing our energy supply, lessening the risk of cascading power outages and reducing our grid's vulnerability to terrorism or accidental damage.

I have every confidence that you will find New Jersey's Clean Energy Program 2003 Annual Report to be an excellent resource to help you take advantage of a number of ground-breaking programs and initiatives. Please join us, as we continue to advance New Jersey's national leadership in energy efficiency and renewable technologies.

Governor James E. McGreevey

With all good wishes,

James E. McGreevey

New Jersey's Clean Energy PROGRAM™

Message from New Jersey Board of Public Utilities President Jeanne M. Fox

Here in New Jersey, we've made tremendous strides advancing the market for clean energy technologies, while ensuring access and affordability for all New Jerseyans. Through our Clean Energy Program and a strong partnership with other State agencies, we've become a national leader in energy efficiency and renewable energy initiatives for both electricity and natural gas. Many of our programs - including New Jersey ENERGY STAR® Homes, our Residential Home Heating and Cooling Programs and the Customer On-Site Renewable Energy Rebate Program - have received national recognition, accolades and awards for outstanding achievement.

New Jersey's Clean Energy Program is doing a terrific job of providing financial incentives that give residential customers, businesses, schools and government facilities the power to save. Last year alone, homeowners, schools, municipalities and businesses across the State received $30 million in renewable energy grants and rebates that substantially reduced the upfront costs of clean energy projects including the installation of solar photovoltaic electric systems. We also provided $100 million for natural gas and electricity efficiency measures which reduced energy use and energy costs for over 55,000 homeowners, schools, municipalities and businesses. These investments – including programs to lower energy costs, install renewable energy technologies and upgrade heating, cooling or lighting systems - will save residents and businesses nearly $400 million over the life of the products installed. Moreover, energy savings and associated emission reductions increased by more than 25 percent over the levels achieved the previous year.

Some of our most impressive achievements over the past year have been in New Jersey's promotion of solar energy. In 2003, the number of solar systems more than doubled and nearly 100 new solar energy companies set up shop here in New Jersey. In fact, the Mid-Atlantic Solar Energy Industries Association has remarked that our photovoltaic programs and policies are the best in the entire nation, while the Solar Energy Industries Association has lauded our initiatives and growth as "historic" and proclaimed New Jersey to now be "the solar capital of the nation." All across the state, businesses, school districts and residents are taking advantage of our programs promoting solar energy as a viable, affordable energy source.

I am proud of the work we have done developing a comprehensive suite of initiatives - designed to build a vibrant state energy economy by encouraging the use of clean energy for commercial facilities, schools, municipal buildings and residential homes. We are reducing the harmful impacts from fossil fuel energy, while bolstering infrastructure, service and reliability for our residents. Our efforts are universally recognized as a model for partnership among the electricity industry, environmental communities and renewable energy sectors.

Together we have the power to save energy, reduce costs and make New Jersey a green power state and lead the nation towards a brighter, cleaner energy future!

New Jersey's Clean Energy Program - Your Power to Save.

Jeanne M. Fox, President,
New Jersey Board of Public Utilities

1. INTRODUCTION: NEW JERSEY'S CLEAN ENERGY PROGRAM – YOUR POWER TO SAVE

New Jersey's Clean Energy Program provides financial and other incentives to the State's residential customers, businesses and schools that install high efficiency or renewable energy technologies. The programs help customers lower energy costs and generate electricity using clean, renewable sources of energy. The programs are authorized and overseen by the New Jersey Board of Public Utilities (BPU).

2003 was a year of significant achievements with programs lowering customers' energy usage and increasing the amount of electricity generated in New Jersey using clean, renewable sources. The table below provides highlights of 2003 accomplishments:

2003 Program Accomplishments

- Over 24,000 customers received rebates for the purchase of high efficiency heating and cooling equipment that will save over 219,000 MWh of electricity and 2 million Dtherms of natural gas over the life of the equipment.
- Almost 5,000 new homes were built to ENERGY STAR Home standards that will save over 95,000 MWh and 2.7 million Dtherms over the life of the measures.
- Over 1,000,000 high efficiency compact fluorescent bulbs were purchased by NJ residents that will save over 440,000 MWh over the life of the bulbs.
- Over 6,000 low-income homes received energy efficiency improvements at no cost to the customer that will save over 106,000 MWh and 1.3 million Dtherms over the life of the measures installed.
- Over 6,000 businesses participated in programs to lower their energy costs and installed measures that will save over 2.9 million MWh and 1.5 million Dtherms over the life of the measures.
- 58 renewable energy systems received rebates in 2003 (90 systems were installed in 2003 with 32 systems rebated in 2004) and will generate 110,000 MWh of clean, emission-free electricity over their useful lives.

2003 was also a year of significant changes to the administrative structure of New Jersey's Clean Energy Program. The BPU created the New Jersey Clean Energy Council (CEC) to provide it with advice and recommendations regarding the administrative structure of the programs to be implemented as well as budgets. The BPU transferred responsibility for administration of the programs from the State's electric and gas utilities to the BPU's Office of Clean Energy (OCE) and established a fiscal agent in early 2004 that holds statewide program funds. The activities of the CEC and other changes to the administrative structure of the programs are described in more detail below.

In 2003, New Jersey's Clean Energy Program continued to build on the successes achieved in the first two years of the program. Two programs, the Residential Heating, Ventilation and Air Conditioning (HVAC) and the New Jersey ENERGY STAR Homes Program, have received national recognition. The success of these programs is also a success for New Jersey's environment, which benefits from a reduction in pollution, and for the State's economy, which is strengthened when people and businesses lower their energy costs and increase their buying power.

The table on the following page summarizes New Jersey's Clean Energy Program results for the year 2003, including program expenditures and the energy and emission savings produced by measures committed to or installed during the year.

New Jersey's Clean Energy PROGRAM™

New Jersey's Clean Energy Program
Summary of Statewide Results as of December 31, 2003

	Actual	Committed	Total
Total Expenditures	$97,785,000	$79,453,000	$177,238,000
Energy Savings:			
Annual Savings from Energy Efficiency Measures Installed in 2003			
kWh	285,576,000	184,549,000	470,125,000
Therms	4,105,170	6,360,440	10,465,620
Lifetime Savings from Energy Efficiency Measures Installed in 2003			
kWh	3,739,164,000	2,882,409,000	6,621,573,000
Therms	77,397,090	125,638,900	203,035,990
Cumulative Lifetime Savings of New Jersey's Clean Energy Program (2001-2003)			
kWh	7,085,387,000	4,577,671,000	11,663,058,000
Therms	190,421,140	299,230,780	489,651,920
Annual Generation from Renewable Energy Systems installed in 2003			
kWh	7,239,000	61,750,000	68,989,000
Lifetime Clean Energy Generated from Renewable Energy Systems installed in 2003			
kWh	180,975,000	1,265,337,000	1,446,312,000
Cumulative Lifetime Clean Energy Generated from Renewable Energy Systems (2001-2003)			
kWh	181,003,550	1,510,839,000	1,691,842,550
Annual Sales of Electricity and Natural Gas to all NJ Customers			
kWh*	74,140,083,000		
Therms*	4,922,838,353		
Demand Savings (KW)	263,839	87,274	351,112

Emissions Savings	**Annual Savings (Metric Tons) from Measures Installed in 2003**		**Cumulative Lifetime Emission Savings (2001–2003)†**
	Electric Programs	**Gas Programs**	
CO_2	202,309	21,832	4,253,350
NOX	373	17	7,835
SO_2	865	NA	18,189
Hg (shown in lbs.)	10.34	NA	16.2

*An average New Jersey home uses approximately 8,000 kWh of electricity per year. One 100-watt light bulb that is on for one hour uses 100 watt-hours of electricity. Ten 100-watt light bulbs that are on for one hour use 1 kWh of electricity that would cost on average approximately 10 cents.

1,000 watts operating for one hour =1 kWh;1,000 kWh =1 MWh.

An average home in New Jersey heated with natural gas uses approximately 1,000 therms of gas per year. A therm of natural gas will heat the average home for approximately one hour when the outside temperature is zero. A therm of natural gas will run a typical gas fireplace for three hours. A therm of natural gas costs approximately 1 dollar.

1 Dtherm = 10 therms

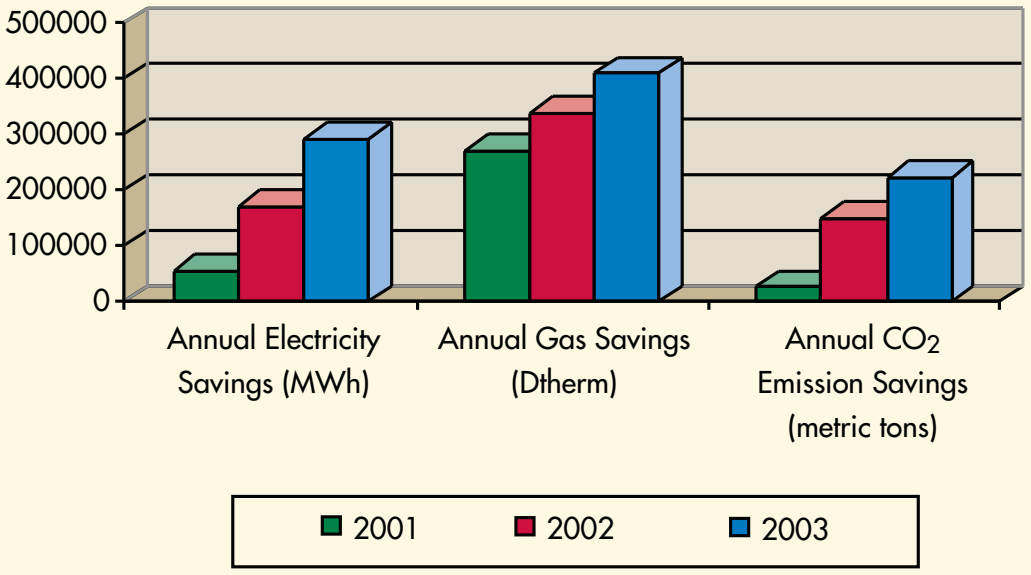
†The energy savings and clean energy generation will continue to reduce emissions over the life of the energy efficiency or renewable energy measures.

As homeowners and businesses improve their competitive position by investing in technologies that reduce their energy costs over the long term, the State will benefit from New Jersey's Clean Energy Program activities for years to come.

Since New Jersey's Clean Energy Program was launched in April of 2001, it has evolved and continued to grow. The energy savings and associated emission reductions produced by the programs in 2003 increased by more than 25 percent over the levels achieved in 2002. A comparison of the annual energy and emission savings demonstrates the significant gains the program has achieved in influencing businesses and homeowners throughout the State to invest in energy efficiency and renewable energy.

Efficient equipment and practices put into effect in 2003 will continue to save energy for an average of 15 years. This year's results add to the energy savings achieved in 2001 and 2002. Combined, the three-year program activities result in annual savings of 7,251,871 MWh of electricity and 19,042,114 Dekatherms of natural gas. The programs have also reduced electric demand by 264 MW, eliminating the need to site and construct a mid-sized power plant.

New Jersey's Clean Energy Program Savings Continue to Grow



New Jersey's Clean Energy PROGRAM™

2. PROGRAM GOVERNANCE

By Order dated January 22, 2003, the BPU established the CEC as advisors on issues related to New Jersey's Clean Energy Program. The CEC membership has broad representation, including utilities, traditional and renewable energy industries, academia, government, consumer groups and environmental organizations. The BPU's January 22nd Order also established the OCE and directed it to interface with the CEC and to provide the information necessary to make informed decisions concerning the optimum utilization of program funds.

The CEC is chaired by BPU President Jeanne Fox, and meetings are facilitated by Rutgers Center for Energy, Economic and Environmental Policy. The Council has three committees: Education and Outreach; Renewable Energy; and Energy Conservation. These committees each have various subcommittees that provide input on issues and present recommendations to the Council for consideration.

The CEC held numerous meetings over the course of 2003 to discuss issues related to the administration of the programs and to consider the appropriateness of establishing a trust fund to hold New Jersey's Clean Energy Program funds. On July 21, 2003, the CEC submitted its report, *Recommendations for Administration and Fund Management*, to the BPU. The report included two key recommendations.

First, the report recommended that the OCE replace the State's utilities as the primary administrator of New Jersey's Clean Energy Program. The OCE would be responsible for hiring entities to manage and implement the programs. Second, the report recommended that New Jersey's Clean Energy Program funds be managed as a single integrated fund, rather than having each utility manage its own account. The report recommended that the Board pursue the designation of a fiscal agent to hold funds received by the utilities.

Clean Energy Council Committees:

"The State of New Jersey has become a national leader in Energy Conservation and Sustainability. The creation by the Board of Public Utilities of the Office of Clean Energy and the Clean Energy Council has created a multifaceted and unique approach by bringing industry experts, stakeholders and public interest groups together with government to proactively pursue the goal of maximum sustainability. The CEC and the dedicated staff of the OCE continue to seek new ways to achieve sustainability in new construction as well as encourage existing facilities to 'Go Green.' We believe this approach will become the national model for sustainability in the near future."

Fred Hauber and Darren Port,
Co-chairs, Energy Efficiency Committee

"In 2003, the Outreach and Education Committee of the Clean Energy Council began creating short and long-range plans to publicize the wide range of substantial opportunities for energy conservation and renewable energy available through the Office of Clean Energy. These efforts should bear fruit in 2004, when we will complete an initial branding effort for the Office of Clean Energy and its programs, launch the first rounds of messaging, complete a 3-4 year plan for Outreach and Education efforts, and issue a series of RFP's through which the Plan's components will be executed."

Rev. Fletcher Harper,
Chair, Outreach and Education Committee

"The Office of Clean Energy at the Board of Public Utilities has successfully taken on a significant challenge for all of New Jersey: to create a new marketplace for the renewable energy industry. The renewable energy industry is one that will not only create jobs for New Jersey; it will reduce reliance on fossil fuels and clean our air. The programs being implemented by the Office of Clean Energy will allow this fledgling industry to take root and will provide a foundation for growth of sustainable businesses for years to come."

Steven Gabel and Lyle Rawlings,
Co-chairs, Renewable Energy Committee

By Order dated September 11, 2003, the Board adopted the recommendations included in the CEC Report. The OCE assumed the role as primary administrator of the programs and began the development of plans to transition from utility to BPU administration of the programs.

In April of 2003, the OCE replaced the utilities as the manager of the ***Customer On-Site Renewable Energy (CORE) Program*** thereby bringing the management of all of the renewable energy programs under the auspices of the BPU. The energy efficiency programs continued to be managed by the State's utilities throughout 2003.

The BPU has engaged Rutgers Center for Energy, Economic and Environmental Policy at the Edward J. Bloustein School of Public Policy and Planning to manage an independent evaluation of New Jersey's Clean Energy Program. The program evaluations will serve as an ongoing feedback loop whereby program administrators, managers and implementers are provided with the information needed to objectively assess whether goals and objectives are being met and to improve programs and processes. The evaluation process can contribute to the BPU's strategic planning activities by providing information to be used in the development and assessment of program goals and objectives.

Additional Changes Anticipated in 2004

Additional changes to the administrative structure of the programs and to the programs themselves are anticipated in 2004. These changes are intended to reduce administrative costs and increase the level of energy savings delivered under the programs.

In early 2004, the fiscal agent became operational. The utilities now send New Jersey's Clean Energy Program funds to a fiscal agent that will hold and disperse funds pursuant to policies and procedures established by the BPU. This allows funds to be expended on a statewide basis without concern for utility service territories.

The BPU has determined that the program management function will be put out to bid. The BPU anticipates the release of requests for proposals to hire program managers later in 2004 and to transition the program management function from the utilities to the selected program managers by the end of 2004.

The BPU has authorized several new programs that will commence in 2004. The BPU has approved a renewable energy and energy efficiency financing program that will be managed by the NJ Economic Development Authority (EDA). This program is intended to offer low-cost financing to large projects in the public and private sector to supplement the incentives that are already in place. The BPU is finalizing the details of the program with EDA and it is expected to kickoff by November 2004.

The BPU has approved a program for commercial customers that offers incentives for combined heat and power projects including gas-fired microturbines and fuel cells and a pay-for-performance program. The OCE is developing the details for both of these programs.

The BPU commenced its second Comprehensive Resource Analysis review in early 2004. This review will determine the funding levels and programs to be funded in the years 2005 through 2008. 2004 is expected to be a year of additional significant changes to New Jersey's Clean Energy Program.

New Jersey's Clean Energy PROGRAM™

3. GOALS AND OBJECTIVES

The following summarizes the goals and objectives that were adopted by the New Jersey Clean Energy Council for 2003[1]:

I. Long-Term Goals for Energy Efficiency and Renewable Energy

1. Make New Jersey a national leader in the promotion and use of energy efficiency and clean renewable energy.
2. Accelerate the use and adoption of renewable energy in order to reduce pollution, conserve natural resources, increase energy self-reliance and establish a secure energy future for New Jersey.
3. Procure as much cost-effective energy efficiency in the State of New Jersey as is possible.
4. Transform the energy marketplace to allow energy efficiency and renewable energy to compete directly with conventional energy sources.
5. With regard to the long-term planning and acquisition of energy resources, energy growth in New Jersey should be obtained through energy efficiency and renewable energy.

II. Specific Objectives

Energy Efficiency

1. The lifetime energy savings that result from measures installed in each year of the Program should increase by 20 percent per year over the levels achieved in 2002, which were 2,604,958,000 kWh and 66,159,220* therms (*corrected from 2002 report).

Renewable Energy

1. Construct 300 MW of new Class I renewable energy capacity in New Jersey by 2008.
2. Increase electricity production of solar energy in New Jersey to at least 120,000 MWh per year by 2008.

With regard to the specific energy efficiency objectives set out above, the lifetime electric savings from measures installed in 2003 increased to 3,849,145,000 kWh or by 47 percent over 2002 levels significantly exceeding the objective. Likewise, the natural gas savings increased to 77,397,090 therms or by 17 percent which is marginally below the goal.

In 2003, approximately 1,134,000 MWh of electricity was generated from 189 MW of existing New Jersey Class II renewable energy facilities and approximately 526,000 MWh of electricity was generated from 75 MW of existing New Jersey Class I renewable energy facilities.

In the current Renewable Energy Certificate trading program, these Class I and Class II renewable energy facilities will generate over $7,000,000 in annual revenues.

With regard to the renewable energy objectives, as of the end of 2003, 1.7 MW of new Class I renewable energy capacity has been installed in New Jersey requiring an additional 298.3 MW by 2008 to meet the objective of 300 MW. 1,400 MWh of clean emission-free electricity was produced by solar energy requiring an additional 118,600 MWh of solar energy production by 2008 to meet the objective of 120,000 MWh.

In a Solar Renewable Energy Certificate (SREC) trading program these renewable energy generators could generate almost $300,000 in annual revenues for the customer generator. In 2003, New Jersey's Clean Energy Program has committed funding for 156 solar electric projects totaling over 5.7 MW to be constructed in 2004. This will exceed the New Jersey RPS solar electric set aside for energy year 2004. These facilities could generate approximately $1,500,000 annually in a SREC system. This additional funding will significantly reduce the payback period for solar electric systems.

[1]By Order dated May 7, 2004, the BPU adopted Program goals and objectives.

4. PROGRAM IMPLEMENTATION UPDATE

In 2002, the BPU first established the Office of Clean Energy (OCE) to administer New Jersey's Clean Energy Program. In the first year, New Jersey's Clean Energy Program focused on getting programs up and running consistently across the State and on achieving participation and energy savings goals. The Program was successful in achieving these goals. In 2003, Program managers focused on maintaining momentum while transitioning to the new administrative structure. The following is a summary of the programs that were implemented in 2003.

Residential Programs:

In 2003, the energy efficiency programs offered to residential customers included the Residential New Construction Program (New Jersey ENERGY STAR Homes), the Residential Electric and Gas HVAC Programs (Cool Advantage and Warm Advantage), the ENERGY STAR Products Program (New Jersey for ENERGY STAR), the Residential Retrofit Program (New Jersey Energy Smart) and Residential Low-Income Program (Comfort Partners).

The ***New Jersey ENERGY STAR Homes Program*** is designed to increase the efficiency of residential new construction, with the long-term goal of transforming the market to one in which all new homes are built to the national ENERGY STAR Homes standard. To be eligible, a home must meet a performance standard of 30 percent less energy consumption than if it had been built to the national model energy code.

The *New Jersey ENERGY STAR Homes Program* is a national award winner recognized by the US Environmental Protection Agency as ENERGY STAR Partner of the Year in 2002. The program was also recognized in 2003 as an Exemplary Program by the American Council for an Energy-Efficient Economy (ACEEE), a non-profit research group based in Washington, D.C., as part of a national awards program to honor America's best energy efficiency market transformation programs.

Consistent with Governor McGreevey's recently announced policy initiative to support development and redevelopment in Smart Growth areas and not subsidize growth outside of these areas, incentives for new construction, including those offered under this program, will be directed to homes constructed in areas designated for growth in the State Development and Redevelopment Plan. This program, as well as the Residential HVAC program, was modified in 2003 to incorporate the changes necessary to implement this new policy initiative.

Since the *New Jersey ENERGY STAR Homes Program* was launched in 2001, it has been coupled with an extensive outreach effort which has resulted in participation by many of New Jersey's largest builders. Program enrollments continue to increase significantly each year, with 12,168 new units committed in 2003 to build to the New Jersey ENERGY STAR Home standard. This represents 37 percent of the 32,984 permits issued in 2003.

As indicted in the chart below, a record 4,936 new homes were certified to New Jersey ENERGY STAR Home standards in 2003, representing over 15 percent of New Jersey's total new homes for the year. This compares with the national average of 5.9 percent for the

New Jersey ENERGY STAR Homes Program

2003 Actual Expenditures: $15,365,000
Committed Expenditures: $30,765,000

# Participants		Market Share		Annual Energy Savings		
Actual	Committed	Actual	Committed	MWh	kW	Dtherm
4,936	12,168	15%	37%	26,812	50,232	743,240

same period and places New Jersey in the top tier of states for statewide market share of ENERGY STAR Homes. This also represents an increase of over 3,000 more homes than were certified in 2002.

The New Jersey ENERGY STAR Homes built or enrolled in 2003 will result in 26,812 MWh of annual energy savings, which, when combined with the savings to be realized from those homes entered into the program in 2001 and 2002, will grow to significant savings over the expected cumulative lifetime of the homes being constructed.

The ***Warm Advantage and Cool Advantage Programs*** promote the installation and use of energy efficient residential heating and cooling equipment. They are designed to transform the market to one in which quality installations of high-efficiency equipment are commonplace. Rebates under this program are available to promote the installation of qualified high-efficiency HVAC equipment (ENERGY STAR qualified central air conditioning and heating systems and water heaters). The *Cool Advantage Program* received national recognition from the ACEEE when it was recognized and profiled as an exemplary energy efficiency program.

The box below includes the number of high-efficiency furnaces, central air conditioning systems, heat pumps, thermostats and water heaters rebated in 2003:

Warm and Cool Advantage Programs High-Efficiency Equipment Installed 2003	
◆ Furnaces	8,777
◆ Central AC units	15,649
◆ Heat pumps	360
◆ Thermostats	1,472
◆ Water heaters	5,732

Gains in efficiency also result from the promotion of proper sizing and installation practices through contractor training sessions. During 2003, 1,244 HVAC technicians received sales and technical training, and 427 technicians were added to the North American Technician Excellence (NATE) certification list.

As a result of the success of these programs, New Jersey is a national leader in the market for high-efficiency HVAC systems. According to manufacturer data from the Gas Appliance Manufacturer Association (GAMA), the statewide market share for ENERGY STAR qualified furnaces is 41 percent, an increase of 9 percentage points from the 2002 level. Although market studies of high-efficiency air conditioning equipment have not been performed in New Jersey in recent years, evidence indicates the State's share of high-efficiency air conditioning equipment (SEER 13 and higher) is in excess of 30 percent - well above national levels.

The chart below summarizes participation levels and annual energy savings for the *Warm and Cool Advantage* programs:

Warm and Cool Advantage Programs 2003 Actual Expenditures: $14,444,000			
# Participants	Annual Energy Savings		
Actual	MWh	kW	DTherm
24,786	14,621	12,254	364,391

The ***ENERGY STAR Products Program*** (New Jersey for ENERGY STAR) promotes the sale and purchase of ENERGY STAR qualified and labeled windows, lighting products and appliances.

In 2003, over 850 stores were enrolled in the *ENERGY STAR Products Program*. Point-of-purchase materials and sales training were provided to support retailers and contractors selling ENERGY STAR qualified products. The program also sponsored a co-op advertising program with industry allies.

The *ENERGY STAR Products Program* was expanded in 2003 to include two new initiatives: the ENERGY STAR Room Air Conditioner Program and the ENERGY STAR Lighting Incentive Program. The ENERGY STAR Room Air Conditioner Rebate Program provided a $25 rebate to residents that purchased an ENERGY STAR qualified room air conditioner. Over 25,000 rebates were processed in 2003.

On October 1, 2003, the ENERGY STAR Lighting Incentive Program was launched in conjunction with the national *Change-a-Light, Change-the-World* campaign. Designed to offer energy efficient lighting to New Jersey consumers at special discounted prices, the program contracted with 15 lighting manufacturers repre-

senting 20 unique retailer groups located in 705 store locations throughout the State. Funding was allocated to provide approximately 1.27 million ENERGY STAR compact fluorescent light (CFL) bulbs and fixtures to the consumers in New Jersey. The retailers represented included all marketplace segments, including grocery, hardware, do-it-yourself (DIY), department, discount, wholesale clubs and drug stores, lighting showrooms, electrical supply houses and lumberyards. The initiative resulted in actual sales of 1,314,622 standard CFLs and 142,913 specialty CFLs for a total of 1,457,535 CFLs. In addition, sales of 24,554 hardwired and 8,251 portable fixtures were purchased.

The New Jersey Energy Smart Program, a home energy audit tool, is now included as part of the *ENERGY STAR Products Program.* Home energy audits were performed by 8,762 residents in 2003. The home energy audits provide customers with a do-it-yourself tool for estimating savings that can be achieved through the installation of various energy efficiency technologies and through the purchase of ENERGY STAR products.

New Jersey ENERGY STAR Products Program 2003 Actual Expenditures: $6,305,000

		Annual Energy Savings	
# Participants*		MWh	kW
Room AC:	25,387	1,432	1,499
Lighting:	1,496,339	61,630	3,587

*Participants equal number of room air conditioners rebated and the number of light bulbs and fixtures sold under the program.

The ***Comfort Partners Program*** has improved energy affordability for New Jersey low-income households who, by definition, spend a high percentage of their income on energy. *Comfort Partners* provided energy savings, improved comfort and home safety and health for more than 6,000 New Jersey low-income households during 2003. The program provided energy education and improvements to the thermal performance of homes. Energy savings were achieved through the installation of energy efficient measures (including air sealing against drafts, insulation and duct sealing), installation of high-performance products and appliances (such as compact fluorescent lighting and ENERGY STAR qualified refrigerators), and performance of health and safety testing to detect, reduce or prevent potentially dangerous by-products.

The New Jersey Comfort Partners Program helps seniors and low-income households throughout New Jersey to find ways to reduce their energy usage and improve their overall standard of living by reducing their utility bills. The home pictured above, in Freehold, NJ has achieved heating and air conditioning savings by sealing numerous air leakage sites in the attic and sealing gaps in the ductwork.

The ACEEE recognized and profiled *Comfort Partners* as a model of exemplary practices for program design and implementation. *Comfort Partners* also was a contributing factor in one utility's receipt of the 2003 ENERGY STAR Leadership award by the U.S. Department of Energy.

A program evaluation recently performed by Apprise Inc. showed average savings of 787 kWh (11.7 percent) per participating household receiving electric baseload measures and average savings of 82 ccf (6.9 percent) per participating household with gas heat and an estimated 500 kWh (8 percent) for households receiving electric heat measures. The evaluation also showed 92 percent of participants understand the program and 96 percent are satisfied with the program overall. Recommendations from the evaluation also led to improved program tracking systems, procedures manual, material and installation specifications, quality assurance practices and reporting during 2003.

An arrearage forgiveness portion of the program helped approximately 2,900 participating customers reduce their energy burden on the past-due portion of their utility bills during 2003.

Comfort Partners was expanded in March 2003 on a pilot basis for Monroe Township customers 65 years of age and older, with household income between 151 percent and 400 percent of federal poverty guidelines and living in total-electric homes. The ***Comfort Partners Seniors Pilot Program*** extended program services to 393 total-electric households during the year. Interim customer satisfaction surveys show that 93 percent of respondents stated they were very satisfied or somewhat satisfied with the Seniors Pilot program overall.

Comfort Partners is complemented by the Weatherization Assistance Program managed by the New Jersey Department of Community Affairs which also delivers weatherization assistance services to low-income customers in the State. Efforts are underway to more closely align the two programs.

Recent efforts have also resulted in coordinating the BPU's universal service programs and *Comfort Partners*. Going forward, *Comfort Partners* will target high-usage customers that are eligible for the Universal Service Fund (USF). The USF provides funding to help defray utility costs for low-income New Jersey families. The arrearage reduction component of *Comfort Partners* is in the process of transitioning to becoming part of the Universal Service Fund.

Comfort Partners Low-Income Program

2003 Actual Expenditures: $14,756,000
Senior Weatherization Pilot: $679,000

# Participants		Annual Energy Savings		
Low-income	Senior Pilot	MWh	KW	Dtherm
6,268	393	13,281	868	65,035

New Jersey's ***Appliance Cycling Programs*** have been in place for over ten years and have grown to include nearly 240,000 remotely controlled devices that can deliver approximately 200 MW of system load relief. The program results in direct benefits to all customers through lower BGS capacity costs since the amount of capacity BGS suppliers must purchase is reduced by the amount of capacity this program is capable of delivering, whether customers are actually cycled or not.

The OCE is looking to expand this program in the near future with new technologies controlling additional appliances and by offering incentives to additional customer classes including commercial and industrial customers. A pilot program awarded through an RFP will be in place in the summer of 2005.

The program has been used to provide both broad relief at times of system peak and localized relief on targeted transmission and distribution circuits. By using radio-activated relays, system operators selectively cycle primarily air conditioning equipment through a variety of operating strategies, which are designed to optimize system load and lower the peak demand while minimizing the impact on the customer. Below is a summary of program results in 2003:

Appliance Cycling Program
2003 Actual Expenditures: $5,916,000

# Participating Customers	KW demand Reduction
223,689	194,531

Commercial Programs:

The C&I Construction (***New Jersey SmartStart Buildings***) Program was designed to address key market barriers to efficient construction on the part of developers, designers, engineers and contractors in the commercial sector. It is available to schools, commercial, industrial, governmental, institutional and agricultural customers. The program focuses on both new construction and retrofits of existing buildings.

The program offers a wide variety of incentives. Rebates for measures such as high-efficiency lighting, heating and cooling equipment and motors are offered to help offset the incremental cost of high-efficiency equipment. Design incentives and support are available to cover a portion of the cost for additional energy efficiency design services, and technical support is provided to help customers evaluate energy efficiency options. In 2003, 6,812 customers, from every segment of the commercial sector, participated in this program. An interactive website (www.njsmartstartbuildings.com) was developed to permit customers to register their projects, find a trade ally and obtain applications on-line. The following chart identifies the measures installed in 2003.

New Jersey SmartStart Buildings Program Measures Installed – 2003	
◆ Prescriptive Lighting	2639
◆ Lighting Controls	123
◆ Performance Lighting	537
◆ LED Traffic Signals	25
◆ VFDs	93
◆ Electric Chillers	44
◆ Gas Chillers	3
◆ Motors	1
◆ Gas Heating	6
◆ Gas Water Heaters	151
◆ Electric Unitary HVAC	4
◆ Geothermal	5
◆ Custom - Gas	32
◆ Custom - Electric	90
◆ Design Support	21
◆ Technical Assistance	1

An important component of this program supports efficient design and construction in schools. The State has commenced a $10 billion school construction initiative and the ***New Jersey SmartStart Buildings Program*** is working to insure that the schools take into consideration the life-cycle costs of energy design and equipment purchase decisions, not just up-front costs. The goal is to have designers make decisions that produce the lowest total costs over the life of the school facilities, where the energy savings more than offset any incremental up-front costs.

Representatives of the Board of Public Utilities Office of Clean Energy and South Jersey Gas presented a check to South Jersey Regional Hospital, a major regional healthcare center located in Vineland, NJ. The facility participated in the New Jersey SmartStart Buildings Program and installed gas absorption cooling, air quality controls, and air conditioning controls. The use of efficient, environmentally friendly technology will enable large businesses, educational and healthcare facilities to control energy costs and maintain a healthier bottom line.

On July 29, 2002, Governor McGreevey issued Executive Order 24 which requires that all new schools be constructed using the US Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) as guidance in the design, construction and operation of the schools. The School Construction Corporation (SCC) has established guidance and policy regarding how to implement this Executive Order. OCE is a supporter of the NJ Chapter of the USGBC and is a member of the NJ High Performance Design Working Group which helps the SCC implement Executive Order 24.

While the number of customers participating in 2003 was down compared to 2002, the level of energy savings increased since projects in 2003 were larger and more comprehensive. The following summarizes overall program expenditures and energy savings:

New Jersey SmartStart Buildings Program
2003 Actual and Committed Expenditures: $43,382,000

	Expenses	# Participants	Annual Energy Savings		
	Actual	Actual	MWh	KW	DTherm
C&I New Construction	$3,832,000	188	11,760	1,935	8,246
C&I Retrofit	$25,095,000	3,818	179,679	34,659	70,277
New School Construction and Retrofit	$1,628,000	203	5,908	1,561	9,482
Total	$30,555,000	4,209	197,347	38,155	88,005

2003 was the inaugural year of the Governor's ***Cool Cities Initiative,*** jointly implemented by the NJ Department of Environmental Protection and the BPU. The goal of this program is the reduction of cooling costs in specific neighborhoods through the planting of trees on city streets. The cities of Trenton and Paterson were the first to benefit from the tree plantings. Due to funding and logistical issues, planting did not begin until November. However, even with this late start, 1,385 trees were planted in Trenton and 891 were planted in Paterson in 2003. Specific neighborhoods were selected in each city based on three criteria: tree canopy cover, residential characteristics and income levels. Below is a summary of program results in 2003:

New Jersey Cool Cities Initiative
2003 Actual and Committed Expenditures: $1,091,000

# Trees Planted	Annual Energy Savings
2,276	TBD*

*Data for estimating energy savings will be collected in the summer of 2004 and compiled by September 2004.

Renewable Energy Programs:

In 2003, the management of the ***Customer On-Site Renewable Energy (CORE) Program*** was transferred from the utilities to the OCE, bringing the management of all renewable energy programs under the auspices of the BPU. The CORE program experienced continued activity and steady growth. Rebates were up from 46 in 2002 to 58 in 2003, with an additional 32 projects completed in 2003 that were not paid until 2004 due to delays in the establishment of the fiscal agent. Of the 90 projects completed in 2003, there were 84 solar electric, 2 fuel cells, 2 small wind and 2 biomass projects.

The number of additional projects approved but not installed at year-end also increased in 2003, with 156 solar electric projects totaling 5.7 MW committed at the end of the year. If all of the committed projects are installed in 2004, the installed solar capacity will be 330 percent greater than the amount installed at the close of 2003.

Of note is the Bayonne Board of Education, which received a commitment for funding solar electric projects on nine separate school buildings. These projects aggregate to 1.8 MW with Program funding totaling $7.15 million. Once installed, Bayonne will have the largest concentration of solar electric generation in the East.

The table below shows the costs and savings for the 58 CORE projects that received rebates in 2003:

Customer On-Site Renewable Energy Program
2003 Actual Expenditures: $7,821,000
Committed Expenditures: $33,248,000

# Participants	Annual Renewable Energy Generation		
Actual	MWh	KW	DTherm
58	7,239	1,743	1,664

In 2003, just under $2,700,000 in grants were awarded or committed to ten renewable energy businesses as part of the OCE's newly established ***Renewable Energy and Economic Development (REED) Program.*** The grants are intended to promote renewable energy business development in the State. The following table lists the recipients of the grants, the amount of the award and a brief description of the project.

In support of New Jersey's goal to increase renewable energy sources, New Jersey Natural Gas installed a 20-kilowatt photovoltaic system at the William L. Maude Service Center in Wall. By converting solar energy into electricity, the PV rooftop panel system is expected to generate about 25,800 kilowatt-hours each year, which equals approximately 9 percent of the facility's electricity needs.

Renewable Energy Economic Development Grants – 2003

Advanced Power Associates Corp.
Award - $119,000
Develop a power conditioner that will allow solar electric and wind power to be used in electrolyzers for the generation of hydrogen.

Energy Photovoltaics, Inc.
Award - $500,000
Commercialization of thin film solar electric panels including improvements in product performance, reduction in product cost, enhanced product certification and marketing.

Green Mountain Energy
Award - $200,000
Education campaign to do outreach to local government officials to include green power in aggregated power purchases.

Madison Energy Consultants
Award - $270,354
A broad-based training and business development program to assist Energy Service Companies establish renewable energy services.

Ocean Power Technologies, Inc.
Award - $499,486
Demonstration and commercialization of a powerbuoy, a wave powered generating technology. The project calls for testing and monitoring the Powerbuoy based on innovative technology that advances the efficiency of converting the mechanical energy from waves into electricity.

Partners for Environmental Quality
Award - $235,895
Demonstration of solar electric systems on houses of worship and education and outreach programs once installed.

Reaction Sciences, Inc.
Award - $297,660
Development of thermochemical hydrogen technology and the demonstration of the technology in a pilot scale solid oxide fuel cell.

Resource Control Corp.
Award - $225,000
Demonstration and commercialization of an integrated system that produces hydrogen from photovoltaic panels, on-site hydrogen storage and fuel cell integration. This system will provide the complete power for a typical home and has multiple off-grid applications.

Sun Farm Ventures, Inc.
Award - $50,000
Develop a first generation monitoring infrastructure based on fixed wireless technology.

World Water Corp.
Award - $300,234
Develop, test and commercialize a converter that is tied to a solar electric panel that will allow for efficient motor and grid interactive qualities.

In 2002, five proposals submitted in response to the *Grid Supply Program* solicitation were awarded funding. The awards are a combination of up-front development grants and productions credits that will be paid during the first five years of operation. In 2003, three of the five projects went to contract and are in various stages of development, with $305,000 expended. The following table identifies the projects that were awarded funding:

Grid Supply Program Awards

Project Name	Technology	Size (MW)	Upfront Incentive	Production Credit	Total Incentive
Community Energy	Wind	7.5	$170,000	2.9¢/kwh	$1.7 million
Clipper Windpower	Wind	21		1.2¢/kwh	$3.1 million
Hoburn	Photovoltaic	1	$255,000	29¢/kwh	$2.6 million
PSEG ET	Landfill gas	4	2.9¢/kwh	$3.9 million	
Atlantic Renewable Energy*	Wind				$300,000
Total		33.5			$11.6 million

*The BPU determined that the Atlantic Renewable Energy project was not ready for funding but awarded $300,000 from the market infrastructure program to fully examine the feasibility of the project in a more detailed manner before committing grid supply funds.

In 2003 the BPU approved three new financing programs to be managed by the NJ Economic Development Authority (EDA): ***Public Entity Financing, Small Business Financing and the Renewable Energy Advanced Power (REAP) Program.*** These programs will provide grants and low-cost financing to projects that supplement the direct financial incentives provided through the other programs.

New Jersey's Clean Energy PROGRAM™

5. PROGRAM EXPENDITURES

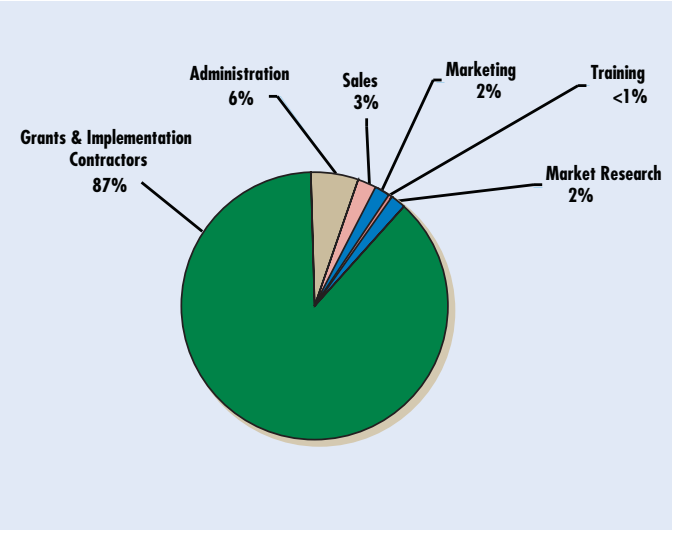
The total statewide budget for New Jersey's Clean Energy Program for 2003 was $137,138,000[1]. The budget allocated $101,138,000 to energy efficiency programs and $36,000,000 to renewable energy programs.

Actual spending for all programs was $97,785,000 or 71 percent of the budget. In addition, commitments were made to projects for incentives that will be paid when the projects are completed in the next year or two that totaled an additional $79,453,000. The table below provides comparison of budgets to expenditures for each program:

2003 Budgets and Expenditures (000)

Program	2003 Budget	Actual Expenditures	Committed Expenditures
HVAC Gas & Electric	$13,970	$14,444	
ENERGY STAR Homes	$19,669	$15,365	$30,765
ENERGY STAR Products	$7,305	$6,305	
Low-Income	$16,134	$15,435	
C&I Construction			
C&I New Construction	$3,145	$3,832	$1,655
C&I Retrofit	$24,089	$25,095	$9,806
New School Construction	$6,670	$1,628	$1,366
Appliance Cycling	$7,906	$5,916	
Cool Cities	$2,000	$39	
School Education	$250	$255	
Renewable Energy	$36,000	$9,472	$44,078
Total	$137,138	$97,785	$79,453

Over 87 percent of the funds expended were spent directly on incentives paid to customers or on measures installed in customers' homes. The following chart shows expenditures broken out by each of the major cost categories:



[1]By Order dated April 29, 2003, the BPU established a 2003 program budget of $156 million. The figures included above represent the approved budgets as modified by the OCE through its approval of the utilities compliance filing.

6. PROGRAM SAVINGS AND COST-EFFECTIVE BENEFITS

In 2003, New Jersey's Clean Energy Program expended $97,785,000 to provide New Jersey homes and businesses with services and financial assistance that generated 285,576,000 MWh of annual electricity savings, 4,105,170 Dekatherms of natural gas savings and 7,239,000 MWh of electricity generated from clean, renewable sources of energy. The amount of electricity saved is enough to provide the annual requirements of approximately 30,000 homes in New Jersey. The programs also reduced demand on the electric system by 264 MWs. Further, in 2003, $79,453,000 in commitments were made for projects to be completed in the next two years that will produce additional annual savings of 184,549,000 MWh, 6,360,440 Dekatherms and 61,750,000 MWh of renewable generation.

The Cost of Actual Energy Savings to the Customer

Average Cost of Savings of New Jersey's Clean Energy Program		Lifetime Savings from Measures Installed in 2003	
Per kWh	Per therm	KWh	Therms
$0.019	$0.30	3,849,145,000	77,379,090

The savings from measures installed in 2003 will continue for the lifetime of the measure. The table above summarizes the lifetime savings from the measures installed in 2003 and the average cost that New Jersey ratepayers paid for the lifetime savings.

In addition to purchasing electricity savings at a cost lower than the cost to purchase an equivalent supply of electricity, these programs produce clear environmental and public health benefits through reduced emissions for electricity that did not need to be generated and natural gas that was not burned. The programs also produce savings for customers that utilize the programs and install energy efficiency or renewable energy measures by lowering their annual energy bills.

The table below documents that New Jersey's Clean Energy Program produces significant energy bill reductions for the State's consumers. The Program has invested over $254 million since 2001 and will see nearly a 4 to 1 return on investment through energy bill savings of almost $1 billion.

These savings accrue to State residences and businesses that installed energy efficiency or renewable energy measures in 2003. These energy savings also produce savings on infrastructure costs, reduce congestion on transmission and distribution lines and increase reliability. The customer bill reductions in the table below do not include the avoided environmental costs of reductions in air emissions, wastewater discharges and waste generated.

Over the years, BPU programs have included the energy conservation programs in the mid-'80s, mandatory Demand-Side Management (DSM) programs and the

The Overall Customer Bill Reductions Resulting from New Jersey's Clean Energy Program

	Annual Energy Savings for 2003 Measures	Lifetime Energy Savings for 2003 Measures	Cumulative Lifetime Energy Savings for 2001 through 2003
Electricity (kWhs)	292,815,000	3,849,145,000	7,251,871,000
Natural Gas (therms)	4,105,170	77,397,090	247,243,330
	Annual Bill Reductions to NJ Energy Customers	Lifetime Bill Reductions to NJ Energy Customers	Cumulative Bill Reductions to NJ Energy Customers
Electricity (kWhs) @ $0.10/kWh	$29,281,500	$384,914,500	$725,187,000
Natural Gas (therms) @ $1.00/therm	$4,105,170	$77,397,090	$247,243,330
Total Customer Bill Reductions	$33,386,670	$462,311,590	$972,430,330

Standard Offer programs. These programs, coupled with New Jersey's Clean Energy Program, have saved New Jersey residents and businesses over 33,000,000 MWh in avoided electricity use and over $2 billion in avoided energy costs. Growth in savings from natural gas energy efficiency programs during this timeframe has also been substantial.

New Jersey's Clean Energy Program Lowers Electricity Demand and Costs

Electricity prices in New Jersey historically tend to spike during times of peak demand. It is during these times, typically on the hottest summer days when air conditioning is in high use, that utilities cannot always meet peak demand with their baseload generators and generation companies have to run their most expensive and inefficient power plants. Some of these facilities can also be the most polluting emission sources. Lowering electrical usage during these times of peak demand can help to lower electricity costs for all customers and improve the environmental quality by reducing overall air emissions.

New Jersey's Clean Energy Program not only saves energy but focuses on saving energy during times of peak demand. For example, installing solar electric, which generates most of its electricity during times of peak usage, is called peak-on-peak efficiency. Another example is installing energy-efficient air conditioning designed to use less energy, which has a direct impact on reducing peak load. Other measures such as high-efficiency lighting and motors save energy all year round, including times of peak demand. The *Appliance Cycling Program* directly reduces load by approximately 200 MW with the flip of a switch at times of peak demand. Increasing the use of these programs can further reduce load demand on electric power systems.

New Jersey's Clean Energy Program is exploring ways to effectively increase the use of load management programs, such as the *Appliance Cycling Program*. Overall, the Program reduced peak electric demand by a total of 264 MW. Also, the natural gas programs focus on reducing usage during times of peak gas demand, which tend to be during the winter months.

New Jersey's Clean Energy Program is Strengthening Our Economy

When the State's businesses and residential customers save money on their electric and natural gas bills, the entire State benefits. Residential customers that spend less on energy have more dollars available to spend on other things. Business customers that reduce their energy bills lower operating expenses, improve profitability and gain a competitive advantage over businesses with higher energy costs. More and more of New Jersey's electricity is being supplied from out-of-state sources.

In addition, dollars spent on energy efficiency decrease the number of dollars flowing to out-of-state businesses since New Jersey has no local sources of fossil fuels. New Jersey's Clean Energy Program uses local businesses to deliver energy efficiency and renewable energy to customers. This spending on local energy resources, instead of out-of-state energy suppliers, has an economic multiplier effect that strengthens New Jersey's economy.

New Jersey's Clean Energy Program is Reducing Pollution

By reducing energy use and promoting renewable sources of energy generation, New Jersey's Clean Energy Program reduces the need to generate electricity and burn natural gas. This eliminates the pollution that would have been caused by such electric generation or natural gas usage. The benefits of these programs continue for the life of the measures installed, which on average for the energy efficiency measures is about 15 years and, for the renewable energy measures, is 25 years or more. Thus, the public receives substantial environmental and public health benefits from programs that also lower energy bills and benefit the economy.

The total reductions in carbon dioxide emissions resulting from New Jersey's Clean Energy Program in 2003 are equivalent to taking 3,700 cars off the road for an entire year. These emission reductions will reduce our State's contribution to greenhouse gasses, smog and acid rain. If energy efficiency and renewable energy measures were provided an allocation or allowance in an air emissions trading program, the avoided emissions from New Jersey's Clean Energy Program could have an annual value of over $2,000,000.

Emission Reductions from New Jersey's Clean Energy Program 2003 Activities

Emissions	Annual Reductions
Carbon Dioxide	224,141 Metric Tons
Oxides of Nitrogen	390 Metric Tons
Sulphur Dioxide	865 Metric Tons
Mercury	10.34 Pounds

For more information about
New Jersey's Clean Energy Program, visit:

www.njcleanenergy.com
or
www.bpu.state.nj.us

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Office of Clean Energy

Your Power to Save – Energy, Money and the Environment

New Jersey's Clean Energy Program is a statewide program administered by the New Jersey Board of Public Utilities that promotes energy efficiency and renewable energy for all New Jersey ratepayers, including residences, businesses, schools and municipalities.

For more information on how you can receive special rebates or incentives on clean energy technologies for your home or business, please visit:

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